CHANGE
NO. 3

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., *16 December 1968*

Operator and Organizational Maintenance Manual Radio Test Sets AN/URM-113 and AN/URM-113A

TM 11-6625-206-12, 9 January 1959, is changed as indicated so that the manual also applies to the following equipment:

Nomenclature	*Contract No.*
Radio Test Set AN/URM-113A . . .	DAAB05-67-C-1634 and DAAB05-68-C-0941

The title is changed as shown above.

Note. The parenthetical reference to previous changes (page 2 of C 2) indicates that pertinent material was published in that change.

Page 3, chapter 1. Add the following below the title.

Note. Radio Test Set AN/URM-113A is similar to Radio Test Set AN/URM-113. Information in this manual applies to both sets unless otherwise specified.

Paragraph 1.1 (as added by C 2, 8 Oct 63) Delete and substitute:

1.1 Indexes of Publications

a. DA Pam 310-4. Refer to the latest issue of DA Pam 310-4 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

b. DA Pam 310-7. Refer to the latest issue of DA Pam 310-7 to determine whether there are modification work orders (MWO's) pertaining to the equipment.

Paragraph 2 (as changed by C 2, 8 Oct 63). Delete and substitute:

2. Forms and Records

a. Reports of Maintenance and Unsatisfactory Equipment. Use equipment forms and records in accordance with instructions given in TM 38-750.

b. Report of Packaging and Handling Deficiencies. Fill out and forward DD Form 6 (Report of Packaging and Handling Deficiencies) as prescribed in AR 700-58 (Army), NAVSUP Publication 378 (Navy), AFR 71-4 (Air Force), and MCO P4610-5 (Marine Corps).

c. Discrepancy in Shipment Report (DISREP) (SF 361). Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38 (Army), NAVSUP Pub 459 (Navy), AFM 75-34 (Air Force), and MCO P4610.19 (Marine Corps).

d. Reporting of Equipment Manual Improvements. Reporting of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to DA Publications) and forwarded direct to Commanding General, U. S. Army Electronics Command, ATTN: AMSEL-ME-NMP-AD, Fort Monmouth, N. J., 07703.

Paragraph 3. Delete the last sentence and substitute: The test set provides the necessary signals, voltages, and metering circuits for go-no-go testing of plug-in units contained in Radio Sets AN/PRC-8, AN/PRC-8A, AN/PRC-9, AN/PRC-9A, AN/PRC-10,

*This changes supersedes C 2, 8 October 1963.

and AN/PRC-10A. Radio Test Set AN/URM-113A also serves as a test jig suitable for use in performing quantitative tests on IF Amplifiers AM-427/U and AM-427A/U.

Paragraph 4, line 6. Delete Crystal frequencies tested and substitute Test frequencies.

Paragraph 5. Make the following changes:
Add the following note after the paragraph heading.

Note. Refer to TM 11-6625-206-12P for authorized list of components and running spares.

Chart, *Item* column. Delete the first item and substitute: Radio Test Set TS-997( )/U.
Page 4, paragraph 5*b*, chart, line 1 (as changed by C 2, 8 October 1963). Change 250-volt to 125-volt.

Add paragraph 8.1 after paragraph 8.

8.1 Differences in Models

Radio Test Set AN/URM-113A differs from the AN/URM-113 as follows:

a. Meter scale redesigned and test procedures modified.

b. Coaxial connector, EXT SIG IN, added to front panel. Permits an external signal generator to be used with the test set.

c. Double VTVM binding post connector added to permit an external vacuum tube voltmeter to be used for quantitative measurements.

d. Test signal level, at which discriminators are checked, is increased to a level typical of those used in actual operation.

Page 5, paragraph 11, chart. Add the following after the last item.

Control or indicator	Function
EXT SIG IN connector (BNC coaxial), AN/URM-113A only.	Connection for external signal generator.
VTVM connectors (double binding post), AN/URM-113A only.	Connections for external voltmeter.

Page 6, paragraph 11, chart, *Control or indicator* column, last item. Change Indicating meter to Indicating meter, AN/URM-113 only. Add the following to the chart:

Control or indicator	Function
Indicator meter, AN/URM-113A only.	Indicates by use of color blocks and a decibel (db) scale the condition of units under test. Indicates relative levels for self-checking and adjusting the test set.

Paragraph 12. Label the present text as subparagraph *a* and add subparagraphs *b* and *c* after subparagraph *a*.

b. The test set provides two methods for testing an amplifier. The first method provides go-no-go indications of amplifier performance at three internally generated test frequencies, and a quantitative gain check at one internally generated frequency. The second method uses an external signal source and an external indicating meter, and provides quantitative test data from which the amplifier gain, center frequency, and bandwidth may be calculated.

c. The test method to be used depends on the data required by the user. Use the test method provided by the test set alone when checking an amplifier for usability in a radio set. Use the test method which requires ancillary equipment only when quantitative test results of amplifier performance are required.

Paragraph 13*a*, line 2. Change 15 to 30. Delete the last sentence of subparagraph *f* and substitute: If the three levels indicated on the AN/URM-113 meter scale differ by more than one-half a division, refer to paragraph 21 for instructions regarding proper adjustments. The AN/URM-113A meter pointer should rest within the CAL LEVEL block (fig. 4.1) in each of these positions. If it does not, the individual oscillator levels must be adjusted (para 21.1).

Paragraph 14. Delete the paragraph heading and substitute: Testing AM-427/U with AN/URM-113.
Add paragraph 14.1 after paragraph 14.

14.1 Testing AM-427/U with AN/URM-113A

a. The AM-427/U is a single-stage, hermetically sealed amplifier used in the radio sets. It is checked in the test set by measuring its response to known test signals.

Note. The procedures given in *b* and *c* below describe the normal test procedures used in checking an amplifier. The procedure given in *d* below describes the quantitative test procedure and should not be used unless quantitative test data are required.

b. The AM-427/U go-no-go meter arc and the decibel arc are shown in figure 5.1. The location of these arcs on the meter scale is shown in figure 4.1. The use of these arcs is described below:

(1) Use the green block on the left when checking the response of an AM-427/U at frequencies of 4.26 mc (L position of the FREQUENCY SELECTOR) and 4.34 mc (H position of the FREQUENCY SELECTOR). These two response checks are made relative to one another. The meter pointer will rest within this green block on both the L and H tests if the center frequency of the amplifier under test is within acceptable tolerance limits.

(2) Use the green block on the right when checking the response of an AM-427/U at 4.30 mc (CTR position of the FREQUENCY SELECTOR). The ctr response check is made relative to the results of the L and H checks. The meter pointer will rest within this green block on the ctr test if its 1.5 DB bandwidth is within acceptable tolerance limits.

(3) Use the two yellow blocks to determine the usability of a substandard AM-427/U. An AM-427/U which causes the meter pointer to rest in one yellow block on the L test and in the other yellow block on the H test is marginal with respect to its center frequency tolerance.

(4) Use the decibel arc to determine the gain of a good AM-427/U (the arc does not extend beyond the acceptable AM-427/U gain spread of 18 to 28 db). The meter pointer indicates the db gain of a good amplifier on the amplifier gain test.

c. To perform the go-no-go tests on the AM-427/U, turn on the test set (para 13), and proceed as follows:

(1) Set the FUNCTION SELECTOR to IF TEST; adjust the RF CAL control completely counterclockwise.

(2) Plug the AM-427/U to be tested in the IF AMPL TEST SOCKET.

(3) Press the PRESS FOR FILAMENT CAL button and adjust the FILAMENT CAL control for a CAL LEVEL indication on the test set meter; release the button.

(4) Perform the go-no-go checks for center frequency, bandwidth, and gain by following the procedures given in (5), (6), and (7) below.

(5) Set the FREQUENCY SELECTOR to L and turn the RF CAL control until the meter pointer rests over the center line of the left green block. Set the FREQUENCY SELECTOR to H and note the position of the meter pointer. The FREQUENCY SELECTOR should then be switched to L and H alternately, and the RF CAL control adjusted until the L and H responses are both spaced equally from the centerline of the green block on the left. (In general, few AM-427/U amplifiers will have identical gain at these two test frequencies and one response will be to the left of this centerline while the other one will be to the right.) The RF CAL adjustment is correct when the L and H test responses are perfectly symmetrical about the centerline of this green block.

(a) The test set response to an acceptable amplifier will be a meter pointer indication within the green block on the left in both the L and H tests. If the amplifier under test is acceptable, proceed to (6) below.

(b) Use the two yellow blocks to determine the usability of substandard AM-427/U. A unit which causes the meter pointer to indicate in one yellow block on the H test and the other yellow block on the L test may be used if a replacement is not available. Do not make any further tests on these substandard units. Use them in radio sets *as is* if their rejection would mean an inoperative radio.

(c) Reject the amplifier if the meter pointer indicates outside the yellow blocks and the green block, or if the meter pointer does not move from its zero position.

(6) Check the L and H responses for proper adjustment of the RF CAL control as described in (5) above. Set the FREQUENCY control to CTR and observe the test set meter indication with respect to the green block on the right.

(a) An acceptable AM-427/U will cause the test set meter pointer to rest within the green block to the right. If the amplifier under test is acceptable, proceed to (7) below.

(b) Reject the amplifier if the meter pointer indicates outside the green block on the right.

(7) Set the FREQUENCY SELECTOR to CTR and FUNCTION SELECTOR to IF TEST. Adjust the RF CAL control until the meter pointer rests over the CAL LEVEL line. Set the FUNCTION SELECTOR to CAL LEVEL. Observe the meter indication

with respect to the decibel scale.

(a) Accept the AM-427/U if its gain is from 18 to 28 db.

(b) Reject the amplifier if the meter pointer indicates a gain of less than 18 db (deflects to right of 18 DB line) or greater than 28 db (deflects to left of 28 DB line).

d. To perform the quantitative tests on the AM-427/U, turn on the test set (para 13), and proceed as follows:

(1) Set the FUNCTION SELECTOR to INT IF BAL.

(2) Set the FREQUENCY SELECTOR to EXT XTAL.

(3) Adjust the HP606A signal generator, or equal, for a 0-db (0.2 volt) output at 4.3 mc and connect to the EXT SIG IN jack of the test set and to the HP524B frequency counter, or equal.

(4) Connect the HP410B vtvm, or equal, to the VTVM binding posts of the test set. Set the vtvm to its 3-volt dc range.

(5) Plug the AM-427/U to be tested into the IF AMPL TEST SOCKET.

(6) Press the PRESS FOR FILAMENT CAL button and adjust the FILAMENT CAL control for a CAL LEVEL indication on the test set meter; release the button.

(7) Adjust the RF CAL control maximum clockwise.

(8) Set the signal generator to 4,300 kc and adjust the output signal level so that the test set meter pointer rests at the CAL LEVEL line. Note the signal generator output level (in db) and record it.

(9) Remove the unit under test from the IF AMPL TEST SOCKET and replace with the test plug.

(10) Adjust the signal generator output so that test set meter pointer again rests on the CAL LEVEL line. Note the signal generator output level (in db) and record it.

(11) Subtract the smaller number ((8) above) from the larger number ((10) above). This will give the gain in db. The gain should be 23 db ±5 for an acceptable unit.

(12) Adjust the output attenuator of the signal generator to obtain an output signal in db of approximately the same value as obtained in (8) above, to prevent overloading of the test set meter and damage to the meter pointer.

(13) Remove the test plug and replace with the AM-427/U under test.

(14) Adjust the signal generator frequency to obtain a peak reading on the vtvm. The frequency as read on the frequency counter should be approximately 4,300 kc.

(15) Vary the signal output level so that the test set meter pointer rests on the CAL LEVEL line. Either the RF CAL control of the test set or the signal generator attenuator may be used to vary the signal level. Note the vtvm reading and record it.

(16) Multiply the recorded reading in (15) above by 0.846 and record. *Example:* Assume that the recorded reading in (15) above is 1.185; then multiply 1.185 by 0.846. This equals 1.0 volts.

(17) Increase the signal generator frequency above 4,300 kc until the voltage of the vtvm drops to the value recorded in (16) above. Record the frequency as indicated on the frequency counter.

(18) Decrease the signal generator frequency below 4,300 kc until the voltage of the vtvm drops to the value recorded in (16) above. Record the frequency as indicated on the frequency counter.

(19) Subtract the lower frequency of (18) above from the higher frequency of (17) above and add 5 kc to the difference to obtain the bandwidth in kc at the 1.5-db points. This should be 60 kc for an acceptable unit. (The 5 kc figure is added as a calibration-selectivity factor to compensate for the buffer gain constant in the test set.)

(20) To calculate the center frequency, add the higher frequency of (17) above and the lower frequency of (18) above and divide the sum by 2. This should be 4,300 kc ± 4 for an acceptable unit.

Page 8, figure 3. Make the following changes: Delete the caption and substitute *Operating controls for AN/URM-113.*

Add figure 3.1 after figure 3.

Page 9, paragraph 15. Add the following note after the paragraph heading:

Note. The results obtained from testing discriminators in the AN/URM-113A will not always agree with the test results of the AN/URM-113. Both the test signal level and the discriminator meter arcs have been changed in the AN/URM-113A. This change was put into the AN/URM-113A. so that discriminators which meet the electrical requirements of documents SC-A-46278-C (TF-132/U) and SC-A-46398-C (TS-204/U) would check good in the AN/URM-113A. The AN/URM-113 would reject many discriminators which would be proven acceptable if tested with the AN/URM-113A in accordance with the electrical requirements given above.

Page 10, paragraph 16*b*. Make the following changes: Subparagraph (2). Delete line 1 and substitute: Plug

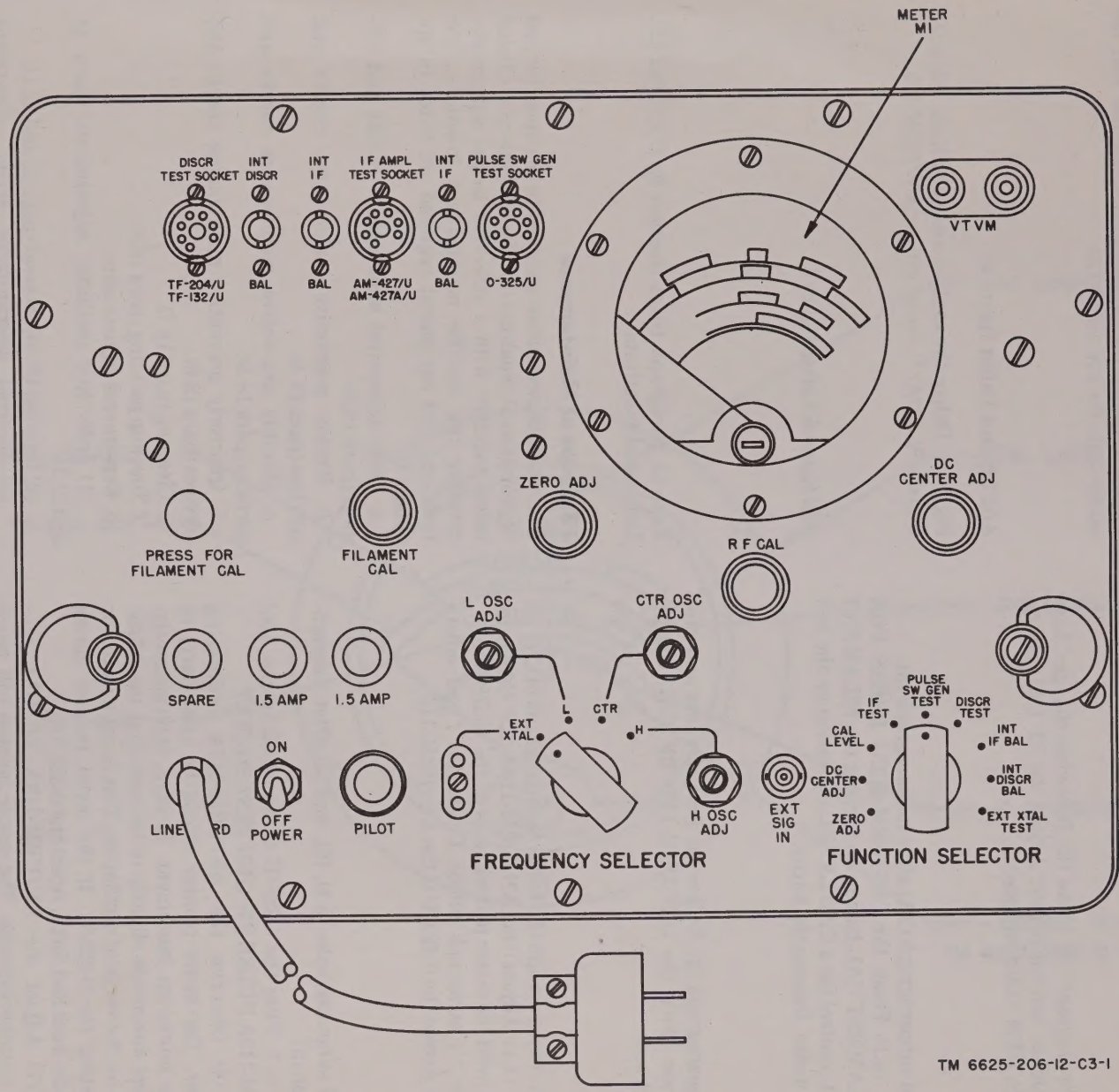

Figure 3.1 Operating controls for AN/URM-113A.

the 0-325/U to be tested (AN/URM-113 only) into the PULSE SW GEN TEST SOCKET.

Subparagraph (3). Make the following changes: Line 1. Delete and substitute: Adjust the RF CAL control (AN/URM-113) completely.

Add subparagraph (3.1) after subparagraph (3).

(3.1) Press the (AN/URM-113A) PRESS FOR FILAMENT CAL button and adjust the FILAMENT CAL control for a CAL LEVEL indication on the test set meter. Release the button.

Subparagraph (4). Delete the first sentence and substitute Move the (AN/URM-113) RF CAL control clockwise.

Add subparagraph (4.1) after subparagraph (4).

(4.1) Adjust the AN/URM-113A RF CAL control until the meter pointer rests on the 18 DB line.

Page 11, paragraph 16*b*(5). Delete line 1 and substitute Accept the 0-325/U if the AN/URM-113.

Add subparagraphs (5.1), (6), and (7) after subparagraph (5).

(5.1) Plug the 0-325/U to be tested in the AN/URM-113A PULSE SW GEN TEST SOCKET.

(6) Observe the AN/URM-113A indicating meter. The meter pointer should be stationary, or have minimum movement. It may, intermittently, deflect downscale slightly to indicate that the 0-325/U is on the verge of oscillation. This is not a cause for rejecting the 0-325/U. If the meter pointer moves rapidly back and forth, reject the 0-325/U.

(7) Adjust the AN/URM-113A RF CAL control counterclockwise. The meter pointer will move to the left; then, at some setting of the RF CAL control, the meter pointer will start to move rapidly back and forth (indicating that the 0-325/U is oscillating). Adjust the RF CAL control clockwise slightly until the meter pointer oscillations stop. Accept the 0-325/U if the meter pointer now rests within the 0-325/U block. Reject it if the meter pointer now rests to the left of the 0-325/U block, or if the 0-325/U does not oscillate at any setting of the RF CAL control.

Figure 4. Delete the caption and substitute *Test set meter scale for AN/URM-113.*

Add figure 4.1 after figure 4.

Figure 5. Delete the caption and substitute *AM-427/U and AM-427A/U, meter arc for AN/URM-113.*

Add figure 5.1 after figure 5.

Page 12, paragraph 18 (as changed by C 2, 8 Oct 63). Delete and substitute:

18. Scope of Maintenance

The maintenance duties assigned to the operator and organizational repairman of the equipment are listed below together with a reference to the paragraphs covering the specific maintenance functions. The tools and test equipment required are listed in appendix B.

a. Daily preventive maintenance checks and services (para 18.3).

b. Weekly preventive maintenance checks and services (para 18.4).

c. Monthly preventive maintenance checks and services (para 18.5).

d. Quarterly preventive maintenance checks and services (para 18.6).

e. Cleaning (para 18.7).

f. Touchup painting (para 18.8).

g. Repairs and adjustments.

(1) Individual oscillator adjustments (para 21 and 21.1).

(2) Internal IF adjustment (para 22 and 22.1).

(3) Internal discriminator driver adjustment (paras 23 and 23.1).

(As added by C 2, 8 Oct 63) add paragraphs 18.1 through 18.8 after paragraph 18.

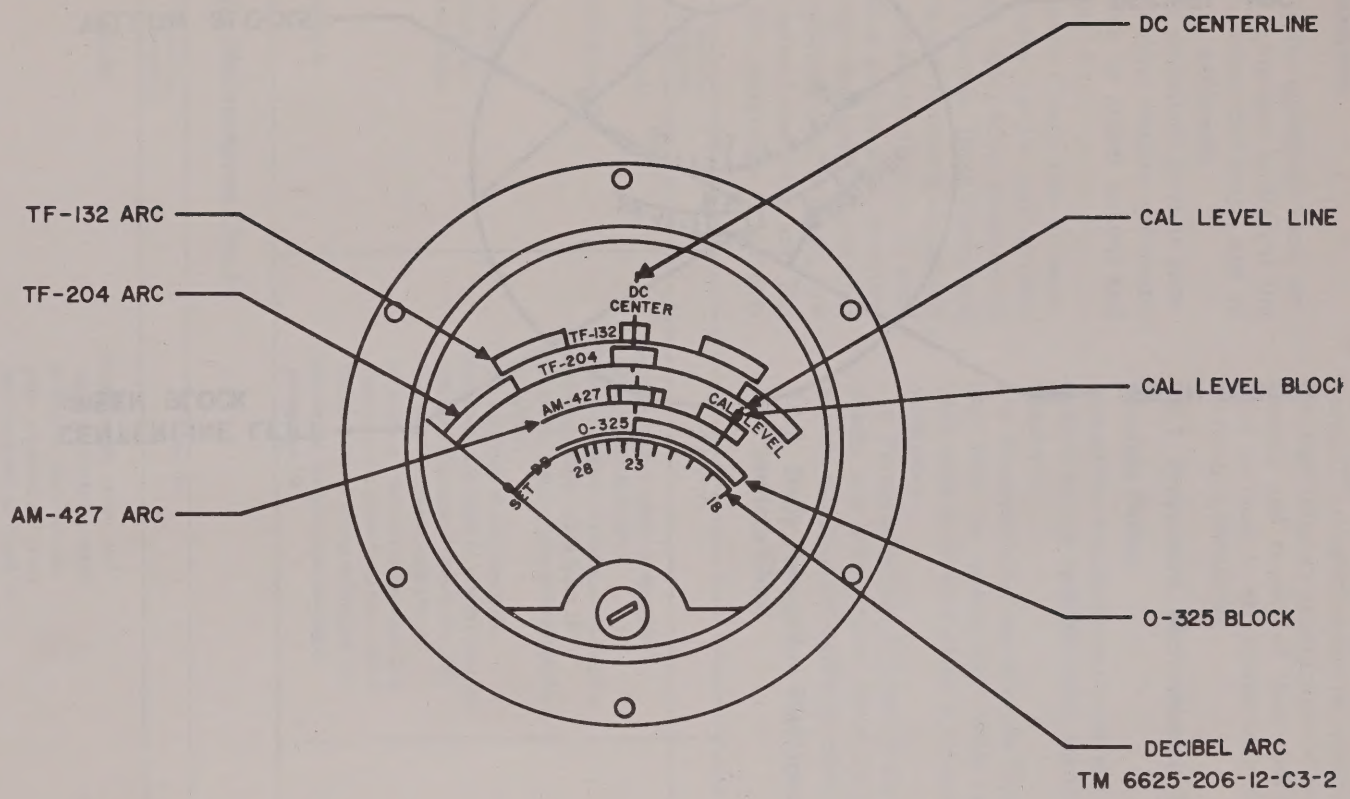

Figure 4.1 Test set meter scale for AN/URM-113A.

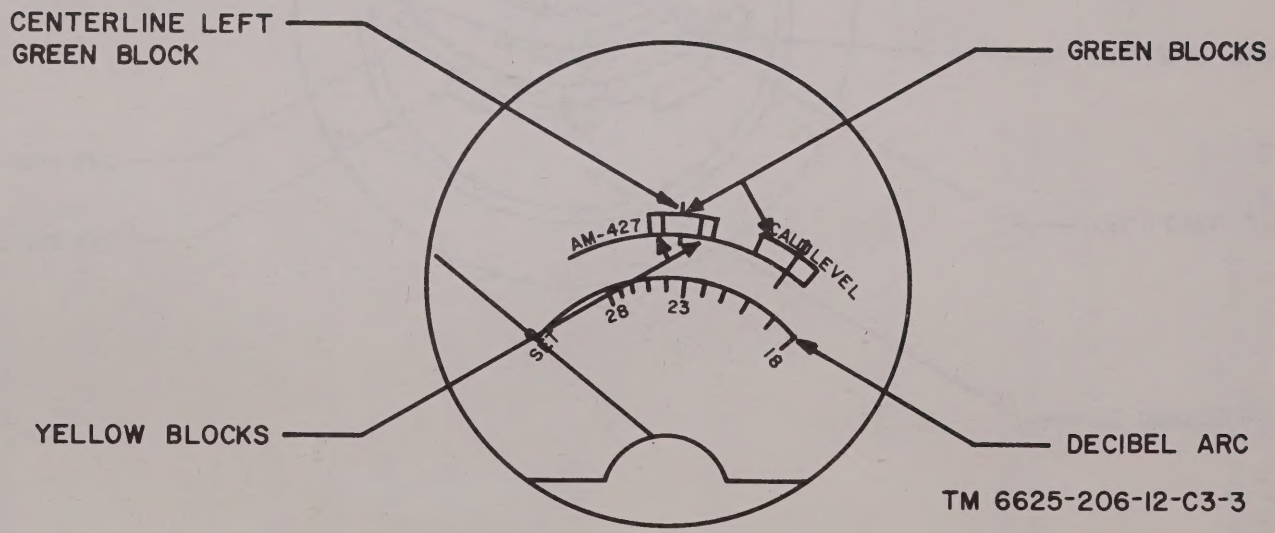

Figure 5.1 AM-427/U and AM-427A/U meter arc for AN/URM-113A.

18.1 Preventive Maintenance

Preventive maintenance is the systematic care, servicing, and inspection of equipment to prevent the occurrence of trouble, to reduce downtime, and to assure that the equipment is serviceable.

a. Systematic Care. The procedures given in paragraphs 18.3 through 18.8 cover routine systematic care and cleaning essential to proper upkeep and operation of the equipment.

b. Preventive Maintenance Checks and Services. The preventive maintenance checks and services charts (paras 18.3 through 18.6) outline functions to be performed at specific intervals. These checks and services are to maintain Army electronic equipment in a combat-serviceable condition; that is, in good general (physical) condition and in good operating condition. To assist operators in maintaining combat serviceability, the chart indicates what to check, how to check, and what the normal conditions are. The *References* column lists the paragraphs or manuals that contain detailed repair or replacement procedures. If the defect cannot be remedied by the operator, high category maintenance or repair is required. Records and reports of these checks and services must be made in accordance with the requirements set forth in TM 38-750.

18.2 Preventive Maintenance Checks and Services Period

Preventive maintenance checks and services of the equipment are required daily, weekly, monthly, and quarterly.

a. Paragraph 18.3 specifies the checks and services that must be accomplished daily (or at least once each week if the equipment is maintained in standby condition).

b. Paragraphs 18.4, 18.5, and 18.6 specify *additional* checks and services that must be performed on a weekly, monthly, and quarterly basis, respectively.

18.3. Daily Preventive Maintenance Checks and Services Chart

Sequence No.	Item to be inspected	Procedure	References
1	Completeness	See that the equipment is complete (TM 11-6625-206-12P).	
2	Exterior surfaces	Clean the exterior surfaces, including the panel and meter glass (para 18.7). Check the meter glass and indicator lens for cracks.	
3	Connectors	Check tightness of all connectors.	
4	Controls and indicators.	While operating (item 5), observe that the mechanical action of each knob, dial, and switch is smooth and free of external or internal binding, and that there is no excessive looseness. Check the meter for sticking or bent pointer.	
5	Operation	Operate the equipment according to paragraph 20.	Para 20.

18.4 Weekly Preventive Maintenance Checks and Services Chart

Sequence No.	Item to be inspected	Procedure	References
1	Cables	Inspect cords, cables, and wires for chafed, cracked, or frayed insulation. Replace connectors that are broken, arced, stripped, or worn excessively.	None.
2	Handles and latches	Inspect handles, latches, and hinges for looseness. Replace or tighten as necessary.	None.

Sequence No.	Item to be inspected	Procedure	References
3	Metal surfaces	Inspect exposed metal surfaces for rust and corrosion. Touchup paint as required (para 18.8).	None.

18.5 Monthly Preventive Maintenance Checks and Services Chart

Sequence No.	Item to be inspected	Procedure	References
1	Pluckout items	Inspect seating of pluckout items. Make sure that tube clamps grip tube bases tightly.	None.
2	Jacks	Inspect jacks for snug fit and good contact.	None.
3	Resistors and capacitors.	Inspect the resistors and capacitors for cracks, blistering, or other detrimental defects.	None.
4	Gaskets and insulators.	Inspect gaskets, insulators, bushings, and sleeves for cracks, chipping, and excessive wear.	None.
5	Interior	Clean interior of chassis and cabinet.	None.

18.6 Quarterly Preventive Maintenance Checks and Services Chart

Sequence No.	Item to be inspected	Procedure	References
1	Publications	See that all publications are complete, serviceable, and current.	DA Pam 310-4.
2	Modifications	Check DA Pam 310-7 to determine if new applicable MWO's have been published. All URGENT MWO's must be applied immediately. ALL NORMAL MWO's must be scheduled.	DA Pam 310-7.
3	Spare parts	Check all operator's spare parts for general condition and method of storage. There should be no evidence of overstock, and all shortages must be on valid requisitions.	TM 11-6625-206-12P

18.7 Cleaning

Inspect the exterior of the equipment. The exterior surfaces should be free of dust, dirt, grease, and fungus.

a. Remove dust and loose dirt with a clean, soft cloth.

***Warning:* Cleaning compound is flammable and its fumes are toxic. Provide adequate ventilation. *Do not* use near a flame.**

b. Remove grease, fungus, and ground-in dirt from the case; use a cloth dampened (not wet) with cleaning compound.

c. Remove dust or dirt from plugs and jacks with a brush.

***Caution:* Do not press on the meter face (glass) when cleaning; the meter may become damaged.**

d. Clean the front panel, meter, and control knobs; use a soft, clean cloth. If necessary, dampen the cloth with water; mild soap may be used for more effective cleaning.

18.8 Touchup Painting Instructions

Remove rust and corrosion from metal surfaces by lightly sanding them with fine sandpaper. Brush two thin coats of paint on the bare metal to protect it from further corrosion. Refer to the applicable cleaning and refinishing practices specified in TB SIG 364.

Paragraph 20*c*, chart. Make the following changes: Step 2, *Normal indication* column. Delete and substitute: The meter indication for the three settings of the AN/URM-113 should be within one-half division of each other on the 0 to 60 scale. The meter indications for the three settings of the AN/URM-113A should be within the CAL LEVEL block.

Step 3. Make the following changes: *Normal indication* column. Delete and substitute: AN/URM-113 meter pointer deflects from 0 to 50 on numerical scale. AN/URM-113A meter pointer can be adjusted to CAL LEVEL line. *Corrective measure* column. Delete and substitute: Adjust AN/URM-113 RF CAL control (para 21). For AN/URM-113A refer to paragraph 21.1.

Page 13, paragraph 20*c*, chart. Delete steps 4, 5 and 6 and substitute the following:

Step	Action or condition	Normal indication	Corrective measure
4	Set the AN/URM-113 FREQUENCY SELECTOR switch to L and H, respectively. Note the meter indication for both settings of the switch.	On both L and H positions, the AN/URM-113 meter needle should move to a point 3 scale divisions below the CTR indication (step 3).	Refer to paragraph 22.
5	Set the AN/URM-113A FREQUENCY SELECTOR to L and adjust the RF CAL control until the meter pointer indicates over the centerline of the green block on the left.	Adjustment can be made	Higher category maintenance repair required.
6	Set the AN/URM-113 FREQUENCY SELECTOR to CTR and the FUNCTION SELECTOR to INT DISCR BAL.	AN/URM-113 metdr pointer deflects from 0 to 30 on numerical scale.	Adjust RF CAL control.
7	Set the AN/URM-113A FREQUENCY SELECTOR to H.	The AN/URM-113A meter pointer should indicate within limits specified by the DC CENTER line and the 23 DB line.	Refer to paragraph 22.1.

Step	Action or condition	Normal indication	Corrective measure
8	Set the AN/URM-113 FREQUENCY SELECTOR switch to L and H, respectively. Note the meter indication for both settings of the switch.	On both L and H poisitions, the AN/URM-113A meter needle should move to a point 3 scale divisions below the CTR indication (step 6).	Refer to paragraph 23.
9	Set the AN/URM-113A FREQUENCY SELECTOR to L and the FUNCTION SELECTOR to INT DISCR BAL. Adjust the RF CAL control until the meter pointer indicates over the centerline of the green block on the left.	Adjustment can be made	Higher category repair required.
10	Set the AN/URM-113A FREQUENCY SELECTOR to H.	The AN/URM-113A meter pointer should indicate within limits defined by the DC CENTER line and the 23 DB line.	Refer to paragraph 23.1.

Page 13, paragraph 21. Make the following changes: Add the following to the paragraph heading: (AN/URM-113 only).

Add paragraph 21.1 after paragraph 21.

21. Individual Oscillator Adjustments (AN/URM-113A Only)

Individual oscillator level controls are provided for the L OSC ADJ, CTR OSC ADJ, and the H OSC ADJ oscillators. These controls are recessed in the front panel (fig. 3.1).

a. Preset the L OSC ADJ, CTR OSC ADJ, and H OSC ADJ controls completely counterclockwise.

b. Set the FUNCTION SELECTOR to CAL LEVEL and the FREQUENCY SELECTOR to L. Adjust the RF CAL control so that the meter pointer rests over the 23 DB line. Switch the FREQUENCY SELECTOR to CTR, and then to H; note the meter indication in each position.

c. Set the FREQUENCY SELECTOR to the oscillator that gave the highest output (greatest meter deflection). Adjust the RF CAL control so that the meter pointer rests over the CAL LEVEL line.

d. Adjust the other two oscillators to the same level by adjusting their individual oscillator adjustment controls. The three levels should all be within the CAL LEVEL block.

Paragraph 22. Make the following change: Add the following to the paragraph heading: (AN/URM-113 Only).

Add paragraph 22.1 after paragraph 22.

22.1 Internal IF Adjustment (AN/URM-113A Only)

The internal IF adjustment is made by tuning the INT IF BAL slugs (fig. 3.1) with the alignment tool (fig. 8).

a. Set the FREQUENCY SELECTOR to CTR and the FUNCTION SELECTOR to INT IF BAL. Insert the test plug in the IF AMPL TEST SOCKET.

b. Adjust the RF CAL control until the meter pointer rests at the 22 DB line.

c. Tune the two INT IF BAL slugs for a maximum indication on the meter scale. Readjust the RF CAL control to return the meter pointer to 22 DB.

d. Set the FREQUENCY SELECTOR to L and adjust the RF CAL control until the meter pointer indicates over the centerline of the green block on the left. Set the FREQUENCY SELECTOR to H and note the meter pointer indication. Touch up the INT IF BAL slugs so that the H indication is very nearly identical with the L indication. The H indication must be within the limits defined by the DC CENTER line and the 23 DB line when the L indication is over the centerline of the green block on the left.

Paragraph 23. Make the following change: Add the following to the paragraph heading: (AN/URM-113 Only).

Add paragraph 23.1 after paragraph 23.

23.1 Internal Discriminator Driver Adjustment (AN. . URM-113A Only)

a. Set the FREQUENCY SELECTOR to L and the FUNCTION SELECTOR to INT DISCR BAL.

b. Adjust the RF CAL control until the meter pointer rests at the centerline of the green block on the left.

c. Set the FREQUENCY SELECTOR to CTR and tune the INT DISCR BAL for maximum indication on the meter scale. Check the meter indication in the L and H positions. Re-tune the INT DISCR BAL slug until the indications are about the same in both the L and H positions. When checking the L position, readjust the RF CAL control as required to keep the meter pointer at the centerline of the green block on the left. The H indication must be within the limits defined by the DC CENTER line and the 23 DB line.

Page 14. Delete figure 7.

Page 16. Add appendix A (as added by C 2, 8 Oct 63) after paragraph 27.

APPENDIX A

REFERENCES

Following is a list of applicable references that should be available to the maintenance personnel of Radio Test Sets AN/URM-113 and AN/URM-113A.

DA Pam 310-4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (types 7, 8, and 9), Supply Bulletins, and Lubrication Orders.
DA Pam 310-7	U. S. Army Equipment Index of Modification Work Orders.
TB SIG 364	Field Instructions for Painting and Preserving Electronics Command Equipment.
TM 11-2535B	Meter Test Set TS-682A/GSM-1.
TM 11-5057	Frequency Meter AN/USM-26.
TM 11-5102	Resistors, Decade ZM-16/U, ZM-16A/U, and ZM-16B/U.
TM 11-5129	Oscilloscopes AN/USM-50A, B, and C.
TM 11-6625-200-15	Operator, Organizational, DS, GS and Depots Maintenance Manual: Multimeters ME-26A/U, ME-26B/U, ME-26C/U, and ME-26D/U.
TM 11-6625-203-12	Operator and Organizational Maintenance: Multimeter AN/URM-105, Including Multimeter ME-77/U.
TM 11-6625-206-12P	Operator's and Organizational Maintenance Repair Parts and Special Tools List: Test Set, Radio AN/URM-113.

TM 11-6625-274-12	Operator's and Organizational Maintenance Manual: Test Sets, Electron Tube TV-7/U, TV-7A/U, TV-7B/U, and TV-7D/U.
TM 11-6625-316-12	Operator and Organizativnal Maintenance Manual: Test Sets, Electron Tube TV-2/U, TV-2A/U, TV-2B/U, and TV-2C/U.
TM 38-750	Army Equipment Record Procedures.

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By Order of the Secretary of the Army:

W. C. WESTMORELAND,
General, United States Army,
Chief of Staff.

Official:

KENNETH G. WICKHAM,
Major General, United States Army,
The Adjutant General.

Distribution:

To be distributed in accordance with DA Form 12-51, direct and general support maintenance requirements for the AN/PRC-8, AN/PRC-9 and AN/PRC-10 radio sets.

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